

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 15024 3/15/2001]

[Docket No. 2000-NE-43-AD; Amendment 39-12144; AD 2001-05-07]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney PW4000 Series Turbofan Engines.

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule, request for comments.

**SUMMARY:** This amendment supersedes airworthiness directive (AD) 2000-25-06, dated December 5, 2000, that is applicable to certain Pratt & Whitney (PW) PW4000 turbofan engines with the current design low pressure turbine (LPT) 4<sup>th</sup> stage air seal installed. That AD currently requires, based on engine model, replacement of the current design seal with a new design seal, or with a modified seal. This amendment adds the listing of certain engine serial numbers, to correct an error in the applicability section of AD 2000-25-06, for engines affected by PW Service Bulletin (SB) PW4 ENG 72-657, Revision 1, dated July, 19, 2000. This correction is prompted by comments received on AD 2000-25-06. The actions specified by this AD are intended to reduce stresses that could lead to LPT 4<sup>th</sup> stage air seal cracking, resulting in seal fracture, uncontained engine failure, and damage to the airplane.

**DATES:** Effective date March 30, 2001. Comments for inclusion in the rules docket must be received on or before May 14, 2001.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-NE-43-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be sent via the Internet using the following address: "9-ane-adcomment@faa.gov". Comments sent via the Internet must contain the docket number in the subject line.

The service information referenced in this AD may be obtained from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone: 860 565-6600, fax: 860 565-4503. This information may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Tara Goodman, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone: 781 238-7130; fax: 781 238-7199.

**SUPPLEMENTARY INFORMATION:** On December 5, 2000, the FAA issued AD 2000-25-06, Amendment 39-12040, (65 FR 78083) dated December 14, 2000 that is applicable to certain Pratt & Whitney (PW) PW4000 turbofan engines. That AD requires replacement of the current design LPT 4<sup>th</sup> stage air seal with a new design seal, or with a modified seal. That action was prompted by reports of cracks in LPT 4<sup>th</sup> stage air seals. That condition, if not corrected, could lead to LPT 4<sup>th</sup> stage air seal cracking, resulting in seal fracture, uncontained engine failure, and damage to the airplane.

Since the issuance of that AD, comments were received on AD 2000-25-06, stating that an error exists in Table 1 which incorrectly includes a limited population of engines affected by PW SB 72-657, Revision 1, dated July 19, 2000. The FAA agrees that an error was inadvertently made, and that the need to correct Table 1 warrants a new superseding final rule, request for comments, to address those comments and other comments received.

Since an unsafe condition has been identified that is likely to exist or develop on other PW4000 turbofan engines of the same type design, this AD supersedes AD 2000-25-06 to require the correction of engine populations affected.

### **Comments Received**

Interested persons have been afforded an opportunity to comment on the Final Rule, Request for Comments, AD 2000-25-06. Due consideration has been given to the comments received, and as a result, this superseding final rule, request for comments AD is deemed necessary.

### **Table 1 Error**

Six commenters state that an error exists in Table 1, that includes a limited population of engines affected by PW SB 72-657, Revision 1, dated July 19, 2000.

The FAA agrees. The error was made inadvertently. This amendment corrects that error by listing certain engine serial numbers in a table to clarify applicability for engines affected by PW Service Bulletin (SB) PW4 ENG 72-657, Revision 1, dated July, 19, 2000.

### **Concern for Future AD Revision or AMOC**

One commenter states a concern that with regard to Table 2, future air seal designs will warrant an AD revision or an alternative method of compliance (AMOC). The commenter requests that this amendment: (1) allow for future air seal part numbers (P/N's), (2) revise Table 1 accordingly, and (3) eliminate Table 2.

The FAA does not agree. This AD is applicable to engines with LPT 4<sup>th</sup> stage air seals P/N 50N478 or 50N478-001 installed and requires a one-time replacement of the air seal, according to Table 2. There is no on-going requirement to use only the parts listed in Table 2 in the future. Table 2 specifies what is a serviceable part. For PW4000 100-inch models, the relevant service information published by Pratt & Whitney is Service Bulletin (SB) PW4G-100-A72-155, Revision 1, dated October 27, 2000. That SB allows installation of LPT 4<sup>th</sup> stage air seals P/N 50N478-001, whereas the AD does not. Because SB's are not incorporated by reference in this AD, the AD defines a serviceable part. The manufacturer has no plans for future air seal designs, which would require new P/N's.

### **Editorial Comment**

One commenter states that, for clarity, the numbering format of Table 1 should be done to the standard for AD's.

The FAA agrees. This amendment incorporates editorial improvements to Table 1.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes as described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted to the address specified under the caption "ADDRESSES". All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2000-NE-43-AD." The postcard will be date stamped and returned to the commenter.

### **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order (EO) No. 13132.

### **Immediate Adoption of this AD**

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under EO No. 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES".

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§39.13 [Amended]**

2. Section 39.13 is amended by removing Amendment 39-12040 (65 FR 78083) dated December 14, 2000, and by adding a new airworthiness directive (AD), Amendment 39-12144, to read as follows:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2001-05-07 Pratt & Whitney:** Amendment 39-12144. Docket No. 2000-NE-43-AD. Supersedes AD 2000-25-06, Amendment 39-12040.

## **Applicability:**

This airworthiness directive is applicable to Pratt & Whitney (PW) PW4052, PW4056, PW4060, PW4060A, PW4062, PW4152, PW4156, PW4156A, PW4158, PW4164, PW4168, PW4168A, PW4460, and PW4462 turbofan engines, with low pressure turbine (LPT) 4<sup>th</sup> stage air seal, part number (P/N) 50N478 or P/N 50N478-001 installed. These engines are installed on but not limited to Boeing 747, 767, McDonnell Douglas MD-11, Airbus Industrie A300, A310, and A330 series airplanes.

**Note 1:** This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

## **Compliance:**

Compliance with this AD is required as indicated, unless already done.

To reduce stresses that could lead to fatigue cracking of the LPT 4<sup>th</sup> stage air seal, resulting in seal fracture, uncontained engine failure, and damage to the airplane, do the following:

(a) If the limits in Table 1 of this AD for LPT 4<sup>th</sup> stage air seal P/N 50N478 or P/N 50N478-001 have been exceeded, replace with a serviceable part prior to further flight.

(b) Replace 4<sup>th</sup> stage air seal, P/N 50N478 or 50N478-001, with a serviceable part, based on engine model, prior to exceeding the cycles-since-new (CSN) or cycles-in-service (CIS) time limits in Table 1 of this AD.

**Table 1. 4<sup>th</sup> Stage Air Seal Time Limits.**

<b>Engine Model</b>	<b>4<sup>th</sup> Stage Air Seal P/N</b>	<b>CSN on Effective Date of This AD</b>	<b>Limit</b>
(1) PW4052, PW4060, PW4060A, PW4156, and PW4158.	50N478.	Fewer than or equal to 8,000 CSN.	8,000 CSN
(2) PW4056, PW4152, PW4156A, and PW4460 engines identified in Table 3, that have incorporated service bulletin (SB) PW4ENG 72-657, Revision 1, dated July 19, 2000.	50N478.	Fewer than or equal to 8,000 CSN.	8,000 CSN
(3) PW4056, PW4152, PW4156A, and PW4460 engines identified in Table 3, that have not incorporated SB PW4ENG 72-657, Revision 1, dated July 19, 2000.	50N478.	Fewer than or equal to 4,500 CSN.	4,500 CSN
(4) PW4056, PW4152, PW4156A, and PW4460 engines not identified in Table 3.	50N478	Fewer than or equal to 8,000 CSN.	8,000 CSN
(5) PW4062 and PW4462.	50N478.	Fewer than or equal to 7,000 CSN.	7,000 CSN
(6) PW4164, PW4168, and PW4168A.	50N478 or 50N478-001	(i) Fewer than or equal to 3,000 CSN.	4,500 CSN
		(ii) More than 3,000 CSN but fewer than or equal to 4,500 CSN	1,500 CIS after the effective date of this AD
		(iii) More than 4,500 CSN but fewer than 6,000 CSN	6,000 CSN

(c) For the purposes of this AD, a serviceable part is defined in Table 2 as follows:

**Table 2. Serviceable Parts.**

<b>For Engine Models</b>	<b>Serviceable P/N</b>
(1) PW4052, PW4056, PW4060, PW4060A, PW4062, PW4152, PW4156, PW4156A, PW4158, PW4460, and PW4462.	51N038 or 50N478-001.
(2) PW4164, PW4168, and PW4168A.	51N038.

**Table 3. Engine SN's Affected by PW SB PWENG 72-657.**

<b>Engine Model</b>	<b>Engine SN</b>
PW4056	P727619, P727623, P727624, P727625 P727626, P727627, P727628, P727629, P727630, P727631, P727632, P727633 P727634, P727635, P727636, P727637, P727638, P727639
PW4152	P724940, P724941
PW4156A	P724574, P724575
PW4460	P733796, P733797, P733798

#### **Alternative Methods of Compliance**

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

#### **Special Flight Permits**

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection and rework requirements of this AD can be accomplished.

#### **Effective Date of This AD**

(f) This amendment becomes effective March 30, 2001.

**FOR FURTHER INFORMATION CONTACT:** Tara Goodman, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone: 781 238-7130; fax: 781 238-7199.

Issued in Burlington, Massachusetts, on March 2, 2001.

David A. Downey, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.